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| **Microwave oven** | **Earth’s atmosphere** |
| **similarities** |  |
| Source of enery- wall socket (electrical) | Source of energy- sun (solar) |
| Energy transformation- electrical to microwave in “microwave generator” | Energy transformation- UV to infrared at earth’s sruface |
| Material being heated- gases, liquids and solids in oven | Materials being heated- gases in atmosphere |
| Process by which temperature rises- microwaves cause certain molecules (e.g. water) to vibrate faster | Process by which temeprature rises- IRwaves cause gases (e.g. water, CO2 and methane) to vibrate faster |
| The microwave excited moleules transfer energy, by collision, to surroundings causing the surroundings (i.e meat) to become hotter | The UV excited molecules transfer energy,  by collision, to surrounding causing the surroundings (i.e. N2 in atmosphere) to become hotter. |
| **differences** |  |
| Humans control the energy input (electrical) | Humans do not control energy input |
| Rate of heating is rapid and temporary | Rate of heating is constant and long term |
| Amount of heating primarily controlled by electrical input | Amount of heating primarily controlled by the amount of energy absording molecues (i.e H20, CO2) |